

CLASS EXERCISES

Match each polynomial on the left with its factored form on the right.

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|--------------------------|----------------------------------|
| 1. $64x^3 + y^3$ | a. $(x - 4)(x^2 + 4x + 16)$ |
| 2. $64x^2 + 16xy + 8y^2$ | b. $(8x - y)^2$ |
| 3. $64x^2 - y^2$ | c. $(8x + y)(8x - y)$ |
| 4. $x^3 - 64$ | d. $8(8x^2 + 2xy + y^2)$ |
| 5. $64x^2 - 16xy + y^2$ | e. $(4x + y)(16x^2 - 4xy + y^2)$ |

Algebra 2
Unit #5
WS #1

PRACTICE EXERCISES

Factor.

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| 1. $3a^2 + 3a$ | 2. $2x^4 + 14x^3$ | 3. $25a^2 - 35a$ |
| 4. $4x^3 - 8x^2 + 16x$ | 5. $30w^2 - 12hw + 6h^2w^2$ | 6. $4a^2 - 4ac + 4c^2$ |
| 7. $12a^3 + 6a^2b + 36ab$ | 8. $28t^3s + 8t^4s$ | 9. $x^2 + 4x + 4$ |
| 10. $x^2 + 2x + 1$ | 11. $x^2 - 14x + 49$ | 12. $x^2 - 18x + 81$ |
| 13. $9x^2 + 48x + 64$ | 14. $x^2 - 2xy + y^2$ | 15. $25x^2 - 40xy + 16y^2$ |
| 16. $81x^2 + 36xy + 4y^2$ | 17. $4a^2 - 1$ | 18. $9x^2 - 1$ |
| 19. $c^2 - 4d^2$ | 20. $16a^2 - 9b^2$ | 21. $4a^2 - 49c^2$ |
| 22. $y^2 - 81z^2$ | 23. $c^3 + 8$ | 24. $d^3 + 64$ |
| 25. $8s^3 + 343t^3$ | 26. $1000f^3 + 27g^3$ | 27. $m^3 - 125$ |
| 28. $f^3 - 216$ | 29. $27x^3 - y^3$ | 30. $8x^3 - 27y^3$ |
| 31. $10axc + 20cay - 30acz$ | 32. $12s^6 + 8s^7 - 32s^8 + 36s^9$ | |
| 33. $a^4 - 4$ | 34. $b^6 - 8$ | |
| 35. $4f^4 - 20e^2f^2 + 25e^4$ | 36. $x^6 + 2x^3y^2 + y^4$ | |
| 37. $36x^6 - 25y^4$ | 38. $100 - 81t^6$ | |
| 39. $y^6 - 64z^8$ | 40. $8x^6 - 27y^6$ | |
| 41. $64x^6y^3 - 27z^3$ | 42. $x^9 - y^3z^3$ | |
| 43. $125x^9 + 729y^6$ | 44. $1331s^{12} - 1728t^6$ | |

Factor. Remember to factor so that the terms have integral coefficients.

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| 45. $x^2 + x + \frac{1}{4}$ | 46. $\frac{1}{4}x^2 + \frac{1}{2}x + \frac{1}{4}$ |
| 47. $x^2 - \frac{1}{9}$ | 48. $x^3 - \frac{1}{8}$ |
| 49. $0.16y^2 - 0.01$ | 50. $0.04y^2 + 0.12y + 0.09$ |

Factor. Assume all exponents are positive integers.

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| 51. $(a + 2b)^2 - d^2$ | 52. $z^2 - (3x + 2y)^2$ |
| 53. $2x^{n+3} + 3x^n$ | 54. $3a^n + 5a^{n+1}$ |
| 55. $x^{2a} - y^{2b}$ | 56. $r^{4a}s^{2b} + 2r^{2a}s^bt^{3a} + t^{6a}$ |